

REMARKS/ARGUMENTS

Claims 23-38 are active in this application. The claims have been amended for clarity and are supported by Claims 1-22 and the specification as originally filed. The specification has been amended in accordance with the Examiner's suggestions. Please note that SEQ ID NO:4 is described on page 8, third paragraph and relates to the  $\Delta$ poxB allele. The specification has also been amended to provide the full address of the depository on page 12.

No new matter is added.

Applicants thank Examiner Kerr for the helpful and courteous discussion granted to the Applicants' undersigned representative on June 1, 2004. The substance of the discussion is summarized and expanded upon in the remarks below.

During the discussion, it was noted that Rieping (US2003/0059903) was filed on April 3, 2002 with priority claimed to provisional application 60/283,384 which was filed on April 13, 2001. However, one of the priority applications of the present application, application serial no. 60/248,210, was filed on November 15, 2000. To perfect priority to this priority application, a certified English translation is attached. Accordingly, Applicants request a recognition of the claimed priority and withdrawal of the rejection over Rieping under 35 U.S.C. § 102(e).

Concerning the rejection of Duncan (US 2003/0119154) with Kramer and Grabau, Applicants submit that the subject matter of Duncan and the claims in the present application were subject to an obligation of assignment to same entity at the time of invention. Accordingly, withdrawal of this ground of rejection is requested.

The rejection of Claims 7-10 under 35 U.S.C. § 112, first paragraph is obviated by the cancellation of these claims. As the rejection may apply to the pending claims, Applicants note the following.

The yjfA and ytfP genes in Claim 34 are defined as being *E. coli* genes and are described in the specification on page 10, lines 7-12. During the discussion, the Examiner noted that the function of the genes is unknown and therefore has taken the position that it would not be possible to use any yjfA or ytfP from any source for the claimed method. However, the Examiner indicated she would reconsider the rejection if the genes are overexpressed in an *E. coli* cell, which is reflected in the claims submitted herein.

The rhtB and rhtC genes are defined as being *E. coli* genes and the thrE gene is described as being a *Corynebacterium glutamicum* gene. These genes are described on page 9 of the present application. During the discussion, the Examiner indicated that while the function of those genes is known, the enzymatic activity is not known. However, the Examiner indicated she would reconsider the rejection if the genes are defined by the source in which they were identified, which is reflected in the claims submitted herein.

In view of the above, withdrawal of this ground of rejection is requested.

The rejection of Claims 1-11 under 35 U.S.C. § 112, first paragraph ("enablement") is obviated by the cancellation of these claims. As this rejection may apply to the pending claims, Applicants note the following.

During the discussion noted above, the Examiner indicated that the rejection would be reconsidered if Applicants provided evidence that active regions in the pyruvate oxidase. To this end, Applicants attach hereto two publications which were published before the priority application, demonstrating this knowledge: Wang et al (1991) *J. Biol. Chem*, 266(17):10959-10966; and Grabau et al(1989) *J Biol Chem* 264(21):12510-12519.

Grabau et al describes point mutation and identification of amino acid residues involved in enzyme activity. Wang describes the activity of the pyruvate oxidase as a function of the structure of the enzyme. In view of this knowledge and the description

provided in the present specification, it would not require undue experimentation to attenuate the *poxB* gene as in the present claims. Accordingly, withdrawal of this ground of rejection is requested.

The rejection of Claim 6 under 35 U.S.C. § 112, first paragraph is obviated by the cancellation of Claim 6.

The rejection of Claims 12-15 under 35 U.S.C. § 112, first paragraph as it may apply to the pending claims is respectfully traversed.

Concerning the specific strains and plasmids in Claims 12-15 (now Claims 35-38), Applicants point out that DH5 $\alpha$ /pMAK705 and MG442 $\Delta$ *poxB* have been deposited at the German Collection of Microorganisms in accordance with the Budapest Treaty as described on page 12, lines 23-32 of the application (amended herein to include the full address of the depository).

The reproducible details of constructing plasmid pMW218*gdhA* is described in Example 5 on pages 17-1 and plasmid pMW219*rhtC* is in Example 6, pages 19-20. The reproducible details for preparing microorganisms TOC21R $\Delta$ *poxB* is described in Example 7 on pages 21-22; and B-12288 $\Delta$ *poxB* is described in Example 9 on pages 23-24. Further, the TOC21R $\Delta$ *poxB* and B-12288 $\Delta$ *poxB* microorganisms have been deposited German Collection of Microorganisms in accordance with the Budapest Treaty.

In accordance with the terms of deposit under the Budapest Treaty, all restrictions on the availability to the public of the deposited materials will be irrevocably removed upon granting of a U.S. Patent on this application. In accordance with the provisions of biological material deposits under the Budapest Treaty (see MPEP § 2401 through 2411), the depository has agreed to maintain the deposits for (a) thirty years, (b) at least five years after the most recent request for the furnishing of a sample of the deposits are received by the depository, or

(c) the enforceable life of the U.S. patent granted from this application, whichever is longest.

Furthermore, in the event deposited material becomes non-viable, it will be replaced.

Accordingly, withdrawal of this ground of rejection is requested.

The rejections of Claims 1-15 under 35 U.S.C. § 112, second paragraph and the objections to the specification are addressed by amendment. In particular, the Examiner's

suggestion concerning claim language have been incorporated into the pending claims.

Further, the genes identified in Claim 30 are believed to be clear. The pntA and pntB genes code together for the pyridine transhydrogenase ( $\alpha$  and  $\beta$  subunits) which is described on page 9 of the application. Accordingly, withdrawal of the rejections and objections is requested.

Applicants request allowance of the application.

Respectfully submitted,

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